Zeno of Elea
Fragments
Translatedby John Burnet, 1908

21. Aristotle Metaphysique B 4 10001b 7
If the unit is indivisible, it will, according to the proposition of Zeno,
be nothing. That which neither makes anything larger by its addition to
it, nor smaller by its subtraction from it, is not, he says, a real thing
at all; for clearly what is real must be a magnitude. And, if it is a
magnitude, it is corporeal; for that is corporeal which is in every
dimension. The other things (i.e. surfaces and lines) if added in one way
will make things larger, added in another they will produce no effect; but
the point and the unit cannot make things larger in any way.

If there is space, it will be in something; for all that is is in
something, and to be in something is to be in space. This goes on ad
infinitum, therefore there is no space. R. P. 106.

You cannot traverse an infinite number of points in a finite time. You
must traverse the half of any given distance before you traverse the
whole, and the half of that again before you can traverse it. This goes on
ad infinitum, so that -(if space is made up of points) there are an
infinite number in any given space, and it cannot be traversed in a finite
time.

The second is the famous puzzle of Achilles and the tortoise. Achilles
must first reach the place from which the tortoise started. By that time
the tortoise will have got on a little way. Achilles must then traverse
that, and still the tortoise will be ahead. He is always coming nearer,
but he never makes up to it.
The third argument against the possibility of motion through a space made
up of points is that, on this hypothesis, an arrow in any given moment of
its flight must be at rest in some particular point. Aristotle observes
quite rightly that this argument depends upon the assumption that time is
made up of "nows," that is, of indivisible instants.
Suppose three parallel rows of points in juxtaposition-
Fig. 1. Fig. 2.
A ...... A ......
B ...... B ......
C ...... C ......
One of these (B) is immovable, while A and C opposite directions with

equal velocity so as to come into the position represented in fig. 2. The movement of C to A will be double its movement relatively to B, or, in others words, any given point in C has passed twice as many points in A as it has in B. It cannot, therefore, be the case that an instant of time corresponds to the passage from one point to another.

But, if we assume that the unit is something, each one must have a certain magnitude and a certain thickness. One part of it must be at a certain distance from another, and the same may be said of what surpasses it in smallness; for it, too, will have magnitude, and something will surpass it in smallness. It is all the same to say this once and to say it always; for no such part of it will be the last, nor will one thing be non-existent compared with another. So, if things are a many, they must be both small and great, so small as not to have any magnitude at all, and so great as to be infinite. R. P. 105 C.
If things are a many, they are both great and small; so great as to be of an infinite magnitude, and so small as to have no magnitude at all.
That which has neither magnitude nor thickness nor bulk, will not even be. " For," he says, " if it be added to any other : thing it will not make it any larger; for nothing can gain in magnitude by the addition of what has no magnitude, and thus it follows at once that what was added was nothing. . . . But if, when this is taken away from another thing, that thing is no less; and again, if, when it is added to another thing, that does not increase, it is plain that what was added was nothing, and what was taken away was nothing. R. P. 105 A.

If things are a many, they must be just as many as they are, and neither more nor less. Now, if they are as many as they are, they will be finite in number.

But again, if things are a many, they will be infinite in number; for there will always be other things between them, and others again between these. R. P. 105 B.